

## **ABSTRACT**

Name: MAGIC CANDLES and OILS CANDLES

### **MAGIC ADVERTISEMENT DISPLAYS**

The description included below explains how to create a display of moving, floating candles or oil candles. The same system can be employed for advertisement purposes.

This is accomplished utilizing magnets, and the outcome is impressive because the method employed to create the movement is not obvious to the audience.

## **DESCRIPTION**

Reference for description section: Figures 1 through 7.

A slow-rotation motor (B) is placed into a box (A). A magnet or electromagnet of polarity S N is placed on the axis of the motor B. A bowl or container (D) is placed at a distance of about 3cm or more above box A.

The composition of container D can be glass, plastic or any other non-magnetic material, preferably transparent. Container D can be of any shape (round, oval, rectangle, etc). Part of container D is filled with liquid, preferably pre-boiled filtered water (R). A non-magnetic floating box (E) is placed on the surface of the liquid within container D. Box E can be made of plastic, non-magnetic metal, other non-magnetic material such as cork, Styrofoam or box E can be some inflatable floating object.

A magnet of polarity N S is placed at point O (center of bottom inner surface of box E) within box E. Box E is then air tightly sealed. Candles or oil candles are placed on the surface of box E at point W.

*Mo Luch*

Note 1: The system described above can be decorated as desired (using flowers, colors, lighting, etc).

Note 2: Motor B and the magnet of polarity S N placed on its axis can be positioned above, below or within container D (refer to figure 14).

#### FUNCTIONALITY - System I

When motor B spins, the magnet S N on its axis also spins. The magnet on the axis of motor B creates a magnetic field, which goes through box A, container D, and the liquid R (within container D) and causes box E to spin on the surface. In turn, this causes the real, lit candles or oil candles placed on box E to spin as well.

*Note:* The sizes of the various components that make up this system will depend on the size and weight of the candles or oil candles that are to be placed on box E. Box E must be able to support the weight of the candles or oil candles to be placed on it.

*Note:* The systems described above can be employed for various uses.

#### FUNCTIONALITY - System II

For System II, please refer to figures 8, 9, 10, 11 and 12. This system is a deviation of System I described above.

An axis HT is placed on the axis of motor B (L); a magnet or electromagnet of polarity S N is placed on point C of the axis HT. With this method, box E (and therefore the oil candles or candles placed on it) will move but their motion will be different than the one obtained in System I.

*Boyle*

In System II the magnet of polarity S N can be used to create motions different from the circular one we have seen. If magnet SN is used in different mechanical systems and the size and shape of container D are modified accordingly, motions such as half circle, back and forth, and various others can be accomplished thus causing the candles or oil candles to move along paths such as zigzag, lengthwise, oval, etc.



Note: Aside from the system designed with water and magnets, described above, additional motions can be created utilizing mechanical methods.

The systems described above can be utilized for decorative and advertising purposes. They can be designed to be placed on a tabletop or to be hung (as from a hook for example). For hanging model please see figures 13 and 14.



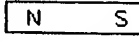
The system utilizing magnets is impressive and mysterious because the method employed to create the movement is not obvious to the audience, which is why the word "magic" is employed in the title.

#### TECHNICAL INFORMATION


- a. If it is desired that box E spins in the center of container D, a U-shaped magnet S-N

 must be used within item A along with a U-shaped magnet N-S  within item E (see figure 4).

- b. If it is desired that item E travels on the inner perimeter of item D, a U-shaped magnet

 S-N  must be used within item A along with a rectangle magnet N-S  within item E.

*Barber*

- c. A great range of different motions can be accomplished by utilizing magnets, electromagnets or electronic coils of various shapes and strengths, placed above, below or elsewhere around container D (on the sides for example).
- d. Other materials such as cork, inflated rubber, inflated plastic, Styrofoam, etc can replace box E.
- e. Item E can be designed to contain the oil (for oil candle) within it. In this case it would be preferable if item E were shaped as a bowl: 
- f. The strength of attraction exercised by the magnet placed in item A onto the magnet placed in item E depends on the distance between items A and E. If the distance between them is too large then item E will not move (spin) and if it is too little then item E will be pulled towards the bottom of container D.
- g. Item E must be able to support the weight of all the candles or oil candles that are to be placed on it.
- Item E on figures 1, 2 and 3 is able to support a weight of 800g
  - Item E on figures 4, 5, 6 and 7 is able to support a weight of 700g
  - Item E on figures 10, 11, 12, 13, 14 and 15 is able to support a weight of 300g
- h. Item E is expected to float and could be designed with a keel under it in order to increase its balance.
- i. Item K appearing on figures 8, 9 and 10 is a non-magnetic metal counterweight (like copper for example).
- j. Item O appearing on figures 3 and 5 indicates the center position where the magnet is to be placed.
- k. Figure 12 represents the top view of item A for figures 8, 9, 10 and 11.
- l. The magnet appearing in item A on all figures can attract and hold a weight of 1.5 kg).
- m. The specifications of motor B are as follows:

*Bowl*

120 VAC

60 Hz

3.5W

25mA

4.8 RPM or a little more

(Note: Any motor of 4.8 or a little more RPM's can be used.)

- n. The distance between components as well as the strength of motors and magnets used will depend on the size of the system to be developed. There is no specific limit in size for this system; it can be designed to be small (as for tabletop) or quite large.  
The distance and size of the various components as well as the strength of motors and magnets is not specified for very large systems, however, I am providing exact distances, sizes, and magnetic strengths for the various components on each figure included; these can be used as a base for bigger and smaller models.
- o. While preserving both the strength of the magnets, which appear on the figures included, and the distance between them, the diameter of container D and the size of box E can be enlarged as desired.
- p. The distance between the magnets within item A and item E can be altered by a few centimeters (more or less) without affecting the system's functionality.
- q. If the depth of container D increases (thus increasing the distance between items A and E) the strength of the magnets must also increase.
- r. Small magnetizable metals can be placed directly underneath the candles or oil candles replacing box E and magnet S-N.

*Borland*

## EXPECTATIONS

All the above mentioned concerning the invention of real moving, lit, candles, oil candles and candle bases can be produced with various other methods or systems, in or out of the water. Those systems can be mechanical, magnetic, electric, electronic, using air under pressure or water under pressure, etc, presenting a display of guided, lit, moving candles or oil candles with various movement patterns as for example circular, oval, zigzag, lengthwise. Other systems such as with multiple candles, some going in one direction and others returning; some going up while others are coming down (similar to a Ferris Wheel ride); some candles going towards the left while others are moving towards the right; candles changing colors using lighting (while moving); spinning twisted candles moving along a path; as well, hanging systems can also be created, etc.

## CONCLUSION

In conclusion, the concept described above is a NEW INVENTION because to this day there do not exist real, lit, guided, moving candles which I am the first to describe and have designed taking into consideration fire safety regulations.

*Boyle*